Work Order ID 106114 *106114* August-28-13 1:10:13 PM Item ID: 646.3512 Accept *N900040100* Setup Start **Revision ID:** Item Name: **STRUT** *4* Start Date: 8/28/13 Start Oty: 4.00 **Cust Item ID:** Required Date: 8/28/13 Req'd Qty: 4.00 **Customer:** Reference: Run Process Plan: MJ Date: 12-08-29 Tooling: Date: Approvals: Stop QC: Date: SPC (Y/N): Date: Sequence ID/ Tool # Plan Reject Operation Set Up/ Tool ID Reject Accept Insp. Work Center ID Description Code Qty Number Stamp **Run Hours** Qty Draw Nbr **Revision Nbr** 646.3500 N/C (ECN) U/I 0.00 14 8 13-10-18 0.00 Memo FLOW CNC Wateriet 1-Cut 646.3500 plate 2.00"X 2.00" as per Dwg Dwg Rev: Prog Rev: 2-Deburr if necessary

0.00

0.00

14 R 13-10-16

QC2- Inspect parts off machine FAI/FAIB

Memo

120

Quality Control

| NCO. | V | / NI- |
|------|-----|-------|
| NCR: | Yes | / No |

Date:

DQA:

| NCR: Y | es / No | | | | WORK ORDER NON-C | CON | IFORN | MANCE / UP | DATE | | | .* | | |
|--------------|-----------------------------------|--------------|-----------|----------|--------------------------------|-----------------|--------------|------------------------|------------------------|--------------|-------------------------|---------------------|--|--|
| | • | | | | | | | | | QA Closed: | Date: | | | |
| Nork Orde | r: | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | /PROCESS | | | |
| Part N | | | | | Rework Scrap | | | Skid-tube Machining | Crosstube Small Fab | | Water Jet d. Eng. Coor. | Engineering Quality | | |
| NCR N | o | | | | Use-as-is Work Order Update | | | noforming Large Fab | Finishing Composite | Rec/Stor | re/Packaging Supplier | Other | | |
| Root | | 1 | | Descr | iption of work order update | l ir | nitial | Ac ⁻ | tion | Sign & | | | | |
| Cause | Date | Step | Qty | | or Non-conformance | Chi | ief Eng | Desc | ription | Date | Verification | QC Inspector | | |
| oc/Data | | | | | | | | | | | | | | |
| quip/Tooling | | | | | | | | | | | | | | |
| perator | | | | | | İ | | | | | | | | |
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| etup | _ | | | | | | | | | | | | | |
| Other | _ | | | | | | | | | | | | | |
| rocess | | | | | | | | | | | | | | |
| upplier | | | 1 | | | | | | | | | | | |
| raining | | | | | | İ | | | | | | , | | |
| Inapproved | | | | <u> </u> | | | | | | | | | | |
| | | | | | | AUL | T CATE | GORY | | | | | | |
| Landir | ng Gear | | | Γ- | General □ | | ۱ | | _ | ٦ | | 7 | | |
| 1 | Bendin | | | | Bend | \vdash | Grain | | _ | Ovalized | | Pressure/Forced | | |
| ļ | | Not Conce | entric to | o/s | BOM/Route | - | Hardwa | | <u> </u> | Over/Under | <u> </u> | Temperature/Cure | | |
| 1 | Cracks | | | | Broken/Damaged | \vdash | | ion Incomplete | ,, , <u> </u> | Part Incorre | | Weld | | |
| ļ | — 1 | d/Crimped | j | _ | Burrs | _ | | tions Incomplete/ | 'Unclear | Part Lost/Mi | issing | Wrong Stock Pulled | | |
| | Cuffs | | | _ | Contamination | \vdash | Mainte | | <u> </u> | Part Moved | | | | |
| | Heat Tr | | | - | Countersink | \vdash | Mislabe | | <u> </u> | Positioned V | · - |] | | |
| | | ion Strip ii | n Tube | | Cut Too Short | - | Misread | ı | | Power Loss/ | Surge | Other | | |
| | Ripples | | | <u> </u> | Drill Holes | \vdash | Offset | o 1:1 . · · | | | | | | |
| | Torque Waves in Extrusion Drawing | | | | | | | Calibration - | | | | | | |
| l | Turning | Sequence | е | | Finish | Out of Sequence | | | | | | | | |

Outside Dimensions

Wave/Twist in Tube

| Work Ord | | 06114 | | *106 | 114* | | | | | | Page 2 | |
|--|--|---|------------------------|--------------------------------------|-----------------------------------|-------------------------|---------------|-------------|---------------|-------|----------------|---|
| Item ID: Revision ID: Item Name: Start Date: Required Date Reference: | 646.3512 STRUT 8/28/13 :: 8/28/13 | Start Qty: 4.00 Req'd Qty: 4.00 | *4* *4* | Accept | *N900040 Cust Item ID: Customer: | 100 |)* s | etup | Start Stop | *NS | | |
| Approvals: | | an: | Date: | Tooling: SPC (Y/N): | Date:Date: | | R | | Start Stop | *NF | | |
| Sequence ID/ Work Center I 130 *130* QC Quality Control | . | Operation Description QC8- Inspect parts - second | nd check | Set Up/ Run Hours 0.00 DAS 27 0.00 B | | Plan Code | Accept Qty | Reje Qty | | | Insp. Stamp | |
| *140 *140* Small Fab Small Fab | | Memo 1- Fabricate | tube as per dwg | 0.00 | | | 14_ | | 13 | 3-//- | 27_ | M |
| 150 *150* QC Quality Control | | QC5- Inspect part compl | eteness to step on W/O | 0.00 | NA | DAS 9 9-89 | | | | | | |

| | | | | | | | | | | | DQA: | Date: | N |
|---------------|----------|--|------------|----------|--|----------------------------|----------|--------------------|-----------------|--|--------------|----------------|--------------------|
| NCR: | Yes | / No | | | | WORK ORDER NON- | COI | NFORN | ANCE / UF | PDATE | | | • |
| | | • | | | | | | | <u>•</u> | | QA Closed | Date: | |
| Work Orde | or. | | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | /PROCESS | |
| , work ora | ٠ | <u>. </u> | | | | Rework | ור | | Skid-tube | Crosstube | 7 | Water Jet | Engineering |
| Part I | No. | | | | | Scrap | 1 1 | ľ | Machining | Small Fab | Pro | od. Eng. Coor. | Quality |
| | | | | | | Use-as-is |] | Therm | noforming | Finishing | Rec/Sto | re/Packaging | Other |
| NCR I | No. | | | | | Work Order Update |] | | Large Fab | Composite | _ | Supplier | |
| Doct | | | ı | | Doscri | ption of work order update | _ | Initial | Λ. | ction | Sign & | <u> </u> | |
| Root Cause | | Date | Step | Qty | 1 | or Non-conformance | 1 | ief Eng | | cription | Date | Verification | QC Inspector |
| Doc/Data | | Date | эсер | Qty | | or won-comormance | + - | iler Elig | <i>DC3</i> | cription | Dute | Vermedien | Qe mspector |
| Equip/Tooling | \vdash | |] | | | | | | | | | | |
| Operator | \vdash | | | | | | | - | | | | | |
| Material | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | |
| Other | Г | | | | 1 | | | | | | | | |
| Process | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | <u> </u> | |
| | | | | | | | AUI | LT CATE | GORY | | | | |
| Landi | ing (| 7 | | | - | General | _ | 7 | | | 7 | | . |
| | <u> </u> | Bending | | | . - | Bend | \vdash | Grain | | - | Ovalized | | Pressure/Forced |
| | <u> </u> | Centre N | ot Conce | ntric to | o/s | BOM/Route | \vdash | Hardwa | | | Over/Unde | | Temperature/Cure |
| | \vdash | Cracks | | | <u> </u> | Broken/Damaged | \vdash | 4 ' | on Incomplete | <u>,, , </u> | Part Incorre | - | Weld |
| | - | Crushed/ | Crimped | | <u> </u> | Burrs | \vdash | 4 | ions Incomplete | /Unclear | Part Lost/M | | Wrong Stock Pulled |
| | \vdash | Cuffs | | | | Contamination | <u> </u> | Mainte | | ļ | Part Moved | • | |
| | - | Heat Tre | | | | Countersink | \vdash | Mislabe Misread | | <u> </u> | Positioned | _ | 1 |
| | 1 | Inspection | n Strip in | Tube | | Cut Too Short | | Power Loss | /Surge | Other | | | |

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

| Work Orde August-28-13 1. | | 06114 | | *106 | 3114* | | | | | | | Page 3 |
|--|-------------------|--|--|----------------------|------------------------|------------|--------------|--------------|------------|---------------|------------------|-------------------|
| Item ID: Revision ID: Item Name: | 646.3512 STRUT | | | Accept | *N9000 | 040 | 100 |)* | Setup | Start Stop | 111. | S1* S2* |
| | 8/28/13 | Start Qty: 4.00 Req'd Qty: 4.00 | *4* *4* | | Cust Item II Customer: |) : | | | | | IV. | . 7/ |
| Approvals: | Process Pl | lan: | Date: | Tooling: SPC (Y/N): | Dat | | | | Run | Start Stop | | R1* R2* |
| Sequence ID/ Work Center II | D | Operation Description Weld per dwg A/R Alu | minum rod Batch: M 13 | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accep Qty | t Re Qt | y] | Reject Number | Insp. Stamp |
| *160* Large Fab | | Memo Weld tube to | o plate as per dwg. DT986 ere tube is punch. | 0.00 | | | > | × 14 | | | <i>3-11</i> | -28 W |
| 170 *170* QC Quality Control | | QC9- Inspect visual per | QS1004- Fusion Welds | 0.00 | | | | _([| D _ | <u>13-</u> 11 | 199 | DAS 9 9-89 |
| ¹80 *1 2∩ * | | QC5- Inspect part comp | leteness to step on W/O | 0.00 | | | | ()ī | D | 13-11 | -3 <i>9</i> | DAS 9 9-89- |
| QC | | Memo | | 0.00 | | | | | ノ | | ~ | |

Quality Control

| NCR: Yes / No WORK ORDER NON-CONFORMANCE / UPDATE | | | | | | | | | | | | | • |
|---|------------|---------------------------------|--------------|----------|---------|--|------|---------------------|--|---|----------------|---|---------------------------|
| | | | | | | | | | | | QA Closed: | Date | : |
| Work Orde | er: | | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | /PROCESS | |
| Part I | - . No. | | | | | Rework Scrap Use-as-is Work Order Update | | Therm | Skid-tube Machining noforming Large Fab | Crosstube Small Fab Finishing Composite | -4 | Water Jet d. Eng. Coor. re/Packaging Supplier | Engineering Quality Other |
| NCN | NO | | • | | | Work Order opdate | ן נ | | carge rab | composite | J | Supplie! | |
| Root Cause | | | | | | | | Initial nief Eng | | tion ription | Sign & Date | Verification | QC Inspector |
| Doc/Data | 口 | Date Step Qty Of Non-comormance | | | | | | | | | | | |
| Equip/Tooling Operator | H | | 1 | | | | | | | | | | |
| Material | П | | | | | | | | | | | | |
| Setup | | | | | | | 1 | | | | | | |
| Other | | | | | | | | ٠ | | | Ì | | |
| Process | П | | İ | | | | 1 | | | | | | |
| Supplier | П | | | | | | | | | • | | | İ |
| Training | П | | | | | | İ | | | | | ļ | |
| Unapproved | П | | | | | | | | | | | | |
| | | | | | | | FAUI | LT CATE | GORY | | | | |
| Landi | ng G | ear | | | | General | | - | | _ | _ | | |
| | | Bending | | | | Bend | L | Grain | | | Ovalized | | Pressure/Forced |
| | | Centre N | ot Conce | ntric to | o/s ´ L | BOM/Route | | Hardwa | re | L | Over/Under | tolerance | Temperature/Cure |
| | | Cracks | | | | Broken/Damaged | L | Inspecti | ion Incomplete | | Part Incorre | ct | Weld |
| | | Crushed/ | Crimped | | | Burrs | L | Instruct | ions Incomplete/ | Unclear | Part Lost/M | issing | Wrong Stock Pulled |
| 1 | | Cuffs | | | | Contamination | L | Mainte | enance | | Part Moved | | |
| | | Heat Trea | at | | | Countersink | | Mislabe | eled | L | Positioned ' | Wrong _ | _ |
| | | Inspectio | n Strip in | Tube | | Cut Too Short | | Misread | d | | Power Loss, | /Surge | Other |
| | | Ripples in | n Bend | | | Drill Holes | | Offset | | | | | |
| | | Torque V | Vaves in I | Extrusio | n [| Drawing | | Out of 0 | Calibration | | | | |

Out of Sequence

Outside Dimensions

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Date:

Turning Sequence

Wave/Twist in Tube

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| r ID 10 10:13 PM | 6114 | | *106 | 3114* | | | | | | Page 4 |
|---------------------|--|---|---|--------------------------|--------|--------------|---------------|---------------|------------------|---|
| 646.3512 STRUT | | | Accept | *N900 | 040 | 100 |)* s | | 1.7 | S1* S2* |
| 8/28/13 8/28/13 | Start Qty: 4.00 Req'd Qty: 4.00 | *4* *4* | | Cust Item l Customer: | ID: | _ | | Q. | | |
| | | Date: | Tooling: SPC (Y/N): | | | | R | | , "I V I | R1* R2* |
|) | Operation Description | | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
| | | | 0.00 | | | | <u>- 14</u> | Ø | · Ø | 13-12-2 |
| | QC14- Inspect Spray Pa | int | 0.00 | | | | 14 | | | 10AS 05 1/3:10 |
| | 10:13 PM 646.3512 STRUT 8/28/13 8/28/13 Process Pla | STRUT 8/28/13 Start Qty: 4.00 8/28/13 Req'd Qty: 4.00 Process Plan: QC: Operation Description Memo Prime as per Batch: \2 | 10:13 PM 646.3512 STRUT 8/28/13 Start Qty: 4.00 *4* 8/28/13 Req'd Qty: 4.00 *4* Process Plan: Date: | 10:13 PM | Accept | Accept | Accept | Accept | Accept | Accept *N900040100* Setup Start *N900040100* Setup Start *N900040100* Stop *N900040100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Stop *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N9000401100* Start *N900040100* Start *N900040100* Start *N900040100* Start *N900040100* Start *N900040100* Start *N9000401000* Start *N900040000* Start *N900040000* Start *N900040000* Start *N9000400000* Start *N90004000000000000000000000000000000000 |

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Packaging

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8 /3/12/3 (4)

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| NCR: Y | 'es / | / No | | | | WORK ORDER NON- | 100 | NFORM | MANCE / UPI | DATE | | | , : |
| | , | | | | | | | | | | QA Closed: | Date | : |
| | | | | | | DISPOSITION | | | | AGAINST DE | PARTMENT, | /PROCESS | |
| Work Orde | er: — | . | | | | Rework | 7 | | Chief tuba | Crosstube | 1 | Water Jet | Engineering |
| Dort N | ١٥ | | | | | Scrap | 1 | | Skid-tube Machining | Small Fab | Pro | d. Eng. Coor. | Quality |
| Part N | ' [.] – | | | | <u> </u> | Use-as-is | ┨ | | noforming | Finishing | -4 | re/Packaging | Other |
| NCR N | lo. | | | | | Work Order Update | 1 | 1 | Large Fab | Composite | 1100,010. | Supplier | 1 """ |
| | _ | | | | | | | | | | | | |
| Root | | | | | Descri | ption of work order update | | Initial | Act | ion | Sign & | | |
| Cause | | Date | Step | Qty | | or Non-conformance | Ch | nief Eng | Desci | ription | Date | Verification | QC Inspector |
| Doc/Data | | | | | | | | | | | | | |
| Equip/Tooling | _ | | | | | | İ | | | | | | |
| Operator | _ | | | | | | | | | | | | |
| Material | | | | | | | | | | | | | |
| Setup | _ | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | |
| Training | \dashv | | | | | | | | | | | | |
| Unapproved | Ĺ | | <u> </u> | <u> </u> | | | | | <u> </u> | | | L , , | |
| ļ | :_ | | | | | | AUI | LT CATE | GORY | | | | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| Landi | | | | | Г | General Bend | | Jorgin | | F | Ovalized | Г | Pressure/Forced |
| | — | Bending | -4 | | O/5 | BOM/Route | - | Grain Hardwa | | <u> </u> | Over/Under | toloranco | Temperature/Cure |
| | | Lentre ivo Cracks | ot Conce | ntric to | ^{0/3} - | Broken/Damaged | \vdash | -{ | | <u> </u> | Part Incorre | | Weld |
| | Crushed/Crimped Burrs | | | | | | \vdash | ન ં | ion Incomplete tions Incomplete/I | Inclear – | Part Lost/M | } | Wrong Stock Pulled |
| | $oldsymbol{oldsymbol{	o}}$ | Cuffs | Cimped | | - | Contamination | - | Mainte | | Officical | Part Moved | _ | |
| | \vdash | leat Trea | nt | | <u> </u> | Countersink | \vdash | Mislabe | | <u> </u> | Positioned V | | |

Misread

Out of Calibration

Out of Sequence

Outside Dimensions

Offset

Power Loss/Surge

Other

Turning Sequence
Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish

| Work Orde | | | | *106 | 3114* | | | | | | Page 5 |
|---------------------------------------|--------------------|--|--------------------|----------------------|--------------------------|--------|--------------|---------------|--------------------|------------------|----------------|
| Revision ID: Item Name: | 646.3512 STRUT | | *4* | Accept | *N900 | | 100 |)* s | Setup Star Stop | 1/1 | S1* S2* |
| Required Date: | 8/28/13 8/28/13 | Start Qty: 4.00 Req'd Qty: 4.00 | *4* | | Cust Item I Customer: | D: | | | | | |
| Approvals: | Process QC: | Plan: | Date: | Tooling: SPC (Y/N): | | ate: | | F | Run Stai | " \ | R1* R2* |
| Sequence ID/ Work Center II 250 |) | Operation Description QC21- Final Inspection - | Work Order Release | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
| *250* QC Quality Control | | Memo | | 0.00 | | | | | 17/1 | 2/04 | 4 |

P13-123

| | | | | | | | | | | | DQA: | Date | |
|-----------------|------------|-----------|----------|----------|--------|--|---------|----------|---|--------------|--------------|---|---------------------------|
| NCR: | ⁄es | / No | | | | WORK ORDER NON-C | O. | NFORM | MANCE / UPDATE | | QA Closed: | Date | · |
| Work Ord | - · | · | | | | DISPOSITION | | | AGAINST | DE | PARTMENT | | |
| Work Ord Part I | - . No. | | | | | Rework Scrap Use-as-is Work Order Update | | Therm | Skid-tube Crosstube Machining Small Fab noforming Finishing Large Fab Composite | | 4 | Water Jet d. Eng. Coor. re/Packaging Supplier | Engineering Quality Other |
| 11011 | ٠٠. | | | | | Work order opacie | ' | | | `L | 1 | | |
| Root | | | | | Descri | ption of work order update | 1 | nitial | Action | | Sign & | | |
| Cause | | Date | Step | Qty | (| or Non-conformance | ief Eng | | Date | Verification | QC Inspector | | |
| Doc/Data | | | İ | | | | 1 | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | |
| Material | | | | | | | | | | | | . | |
| Setup | | | l | | | | | | | | | | |
| Other | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | , |
| Supplier | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | | |
| | | · | | | | F | AUL | T CATE | GORY | | | | |
| Land | ing (| Gear | | | | General | _ | _ | | _ | - | _ | |
| | | Bending | | | | Bend | L | Grain | | L | Ovalized | L | Pressure/Forced |
| | | Centre N | ot Conce | ntric to | o/s | BOM/Route | | Hardwa | re | L | Over/Under | tolerance | Temperature/Cure |
| | | Cracks | | | | Broken/Damaged | | Inspecti | ion Incomplete | | Part Incorre | ct | Weld |
| | | Crushed/ | Crimped | | | Burrs | | Instruct | ions Incomplete/Unclear | | Part Lost/Mi | ssing | Wrong Stock Pulled |
| | | Cuffs | | | | Contamination | Г | Mainte | enance | | Part Moved | _ | |
| | | Heat Trea | at | | | Countersink | | Mislabe | eled | | Positioned V | Vrong | |

Misread

Out of Calibration

Out of Sequence

Outside Dimensions

Offset

Power Loss/Surge

Other

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

August-28-13 1:10:13 PM

Work Order ID:

106114

Parent Item:

646.3512

Parent Item Name:

STRUT

Start Date: 8/28/13

Required Date: 8/28/13

Page 1

Start Qty: 4.00

Required Qty: 4.00

| Comments: | IPP REV:A 12.10 | .19 NEW ISSUE | DD VE | .RF:JLM ———— | | | | | | | | | |
|--|------------------------|---------------|-------------|---------------------|----------------------|-----------------|--------------------|----------------|-------------|-------------------|---------------|----------------|--------|
| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
| M304S12GA 304/316 0.100" Sheet | | Purchased | No | | | | sf | 141.0000 | | 0.117894 足_しう・ | 18 -(0-16 | | |
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| 304 RD Tube .500 x .049\ | w | | | Location | | Loc Qty | Lo | oc Code | | | | | |
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| NCR: Y | es/ | / No | | | | WORK ORDER NON- | 100 | NFORN | MANCE / UF | PDATE | | | • | • |
| | | | | | | | | | - | | QA Close | d: D | ate: | |
| Work Orde | | | | | | DISPOSITION | | | | AGAINST DE | PARTMEN | T/PROCESS | | |
| WOIK OIGE | - | | | | | Rework | 1 | | Skid-tube | Crosstube | 1 | Water Je | t□ | Engineering |
| Part N | No. | | | | | Scrap | 1 1 | | Machining | Small Fab | P | od. Eng. Coor | \vdash | Quality |
| | - | | | | | Use-as-is | 1 | | noforming | Finishing | 4 | ore/Packaging | \vdash | Other |
| NCR I | ۷o. | | | | | Work Order Update | 1 | | Large Fab | Composite | | Supplie | r | |
| | | | | | | | | | | | , | | | |
| Root | | | | | 1 | ption of work order update | 1 | Initial | | ction | Sign & | | | |
| Cause | | Date | Step | Qty | (| or Non-conformance | Ch | nief Eng | Des | cription | Date | Verificati | on | QC Inspector |
| Doc/Data | | | | | | | | | | | | | l | |
| Equip/Tooling | Ш | | | | | | İ | | | | | | ļ | |
| Operator | Щ | | <u> </u> | | | | | | | | ļ | | | |
| Material | Ш | | | | | | | | : | | | | ı | |
| Setup | Ш | | | | | | | | | | | | ı | |
| Other | Ш | | | | | | | | | | | | | |
| Process | Ш | | | | | | | | | | | | į | |
| Supplier | Ш | | | | | | | | | | | | l | |
| Training | | | | İ | | | | | | | | | ļ | |
| Unapproved | | | | | | | | | | | | | | |
| | | | | | | F | AUI | LT CATE | GORY | | | | | |
| Landi | ng G | iear | | | | General | | - | | | 7 | | _ | 1 |
| | Ш | Bending | | | <u> </u> | Bend | <u></u> | Grain | | | Ovalized | | \vdash | Pressure/Forced |
| | Ш | Centre No | ot Conce | ntric to | O/S | BOM/Route | | Hardwa | re | | Over/Und | er tolerance | | Temperature/Cure |
| | | Cracks | | | | Broken/Damaged | | Inspecti | ion Incomplete | | Part Incor | rect | oxdot | Weld |
| | | Crushed/ | Crimped | | | Burrs | | Instruct | ions Incomplete | /Unclear | Part Lost/ | Missing | | Wrong Stock Pulled |
| | | Cuffs | | | | Contamination | | Mainte | enance | | Part Move | ed | | |
| ĺ | | Heat Trea | at | | | Countersink | | Mislabe | eled | | Positioned | d Wrong | | _ |
| | | Inspectio | n Strip in | Tube | | Cut Too Short | | Misread | t | | Power Los | s/Surge | | Other |

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Drill Holes

Drawing

Finish

Folio

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

| | ENGINEERING CHANGE NOTIC NO. 02440 SHEET OF 1 |
|-------------------------------------|---|
| APTOAL | DWG NO. 646.3500 REVINC PREPARED S. HUFF / DATE 06/08/09 EFFECT ON DWG |
| TABLISTRIES TAIC | DWG TITLE: STRYT |
| INDUSTRIES, INC. | APPROVED BY ENGR CURRENT ORDER AND STOCK |
| TRANSACTION CODES (TC) | REASON: REVISED GEOMETRY TO ACCOMODATE NEW EXISTING AIRCRAFT PROVISIONS |
| A-ADD C-CREATE R-REVISE D-DELETE | |
| | |
| | |
| SHEET 2 IS: | 54* |
| | |
| | |
| | |
| | 646.3512 SHOWN 646.3513 OPPOSITE |
| } | 646.3313 UPPUSITE . |
| | 100 |
| | 72 |
| | R 650 |
| | SHOP C Y |
| (8 25 | ENGINE FILE |
| (02) | " 7,50 // UNCONTROLES |
| | SUBJECT TO AMENDAL WITHOUT NOTICE |
| | WORK O! WORK O! WORK O! WORK O! WORK O! WORK O! |
| | 12-08:29 |
| | 2.00 |
| | (5.51) |
| . , | |
| DOCUMENTS EFFECTED | CHANGE CATEGORY DER REVIEW REQUIRED O MOL O INSTALL INSTRUC O ICA O FMS O BOM O MAJOR Ø MINOR O YES Ø NO |
| | LIMBLE DINGINGE DIGINGE DIGING DINGEN DI MAGNICALINA |

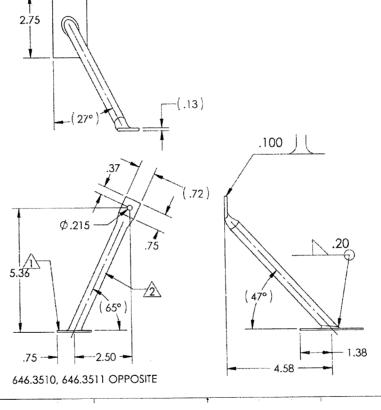
| ENGINEERING CHANGE NOTICE NO. 02197 SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. DWG TITLE: STRUT APPROVED BY ENGR. A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2, IS: EFF: NEXT ORDER FEASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BEUTER PITMENT RES. 15: SHEET 2, IS: OC. FEFECT ON DWG INC. BUNING. SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. STRUT APPROVED BY ENGR. A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2, IS: OC. FEFECT ON DWG INC. BUNING. SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2, IS: OC. FEFECT ON DWG INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF 1 DWG NO. 646.3500 REV:N/C PREPARED S. HUFF DATE: 01/05/09 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 2 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE SHEET 1 OF INC. BUNING. BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-ORRATE R-REVISE D-DRLETE BY A-ADD C-DRLETE BY A-ADD C-DRLETE R-REVISE D-DRLETE BY A-ADD C-DRLETE R-REVISE D-DRLETE BY A-ADD C-DRLETE R-REVISE D-DRLETE BY A-ADD C-DRLETE BY A-ADD C-DRLETE B |
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| INDUSTRIES, INC. APPROVED BY ENGR. APPROVED BY ENGR. APPROVED BY ENGR. APPROVED BY ENGR. APPROVED BY ENGR. BEASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BETTER PITMENT SHEET 2, 1S: SHEET 2, 1S: 442' SHEET 2, 1S: 385' 385' 393' 393' |
| TRANSACTION CODES (TC): A-PROVED BY: REASON: REVISED ANGLE OF 646.3512 & 646.3513 FOR BEUPER_PITMENT SHEET 2, IS: 8 213 THRU 7 15 8 213 THRU 7 15 8 213 THRU 7 15 8 213 THRU 7 15 8 393 |
| TRANSACTION CODES (TC) A-ADD C-C-REATE R-REVISE D-BELETE REAS IN: REVISED ANGLE OF 646.3512 & 646.3513 FOR BELIPER PINMENT SHEET 2, IS: SHEET 2, IS: REAS IN: REVISED ANGLE OF 646.3512 & 646.3513 FOR BELIPER PINMENT 442 SHEET 2, IS: 38 72 646.3512 SADAN 646.3513 SPOSTIT 13 39.31 |
| SHEET 2, IS: SHEET 2, IS: 646,3512 SHEWN 646,3513 OPPOSITE 75 75 75 75 75 75 75 75 75 7 |
| SHEET 2, IS: 646.3512 SHOWN 646.3313 DPPOSITE 10 38.5' 715 39.3' 39.3' |
| DDCUMENTS EFFECTED: MDL INSTALL INSTRUC ICA FMS BDM MAJOR MINOR YES YES MINOR YES YES MINOR YES YES MINOR YES Y |

NOTES:

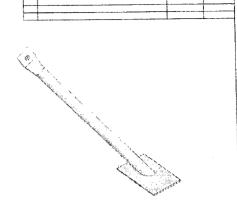
/1 MATERIAL: 6061-T6 ALUMINUM IAW AMS-QQ-A-250/11; .062" THK.

FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2 COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N

- 4. DEBURR AND BREAK ALL SHARP EDGES
- 5. WELDS IAW MIL-STD-2219. TIG WELD WITH FILLER ROD



- 1.50



646.3510 SHOWN 646.3511 OPPOSITE

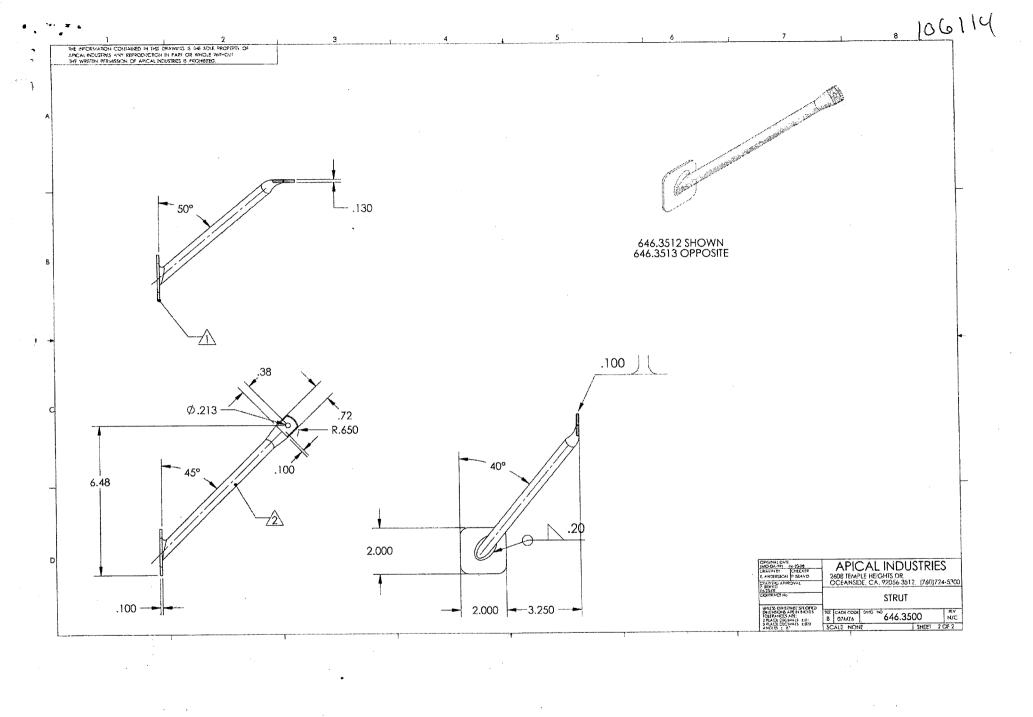
UNINCORPORATED ECN(s)

646.3513 STRUT 646.3512 STRUT AA 646.3511 STRUT $\Delta \Delta$ △ 646.3510 STRUT

SHEET 1 OF 2

| | FIND # | PART# | DESCRIPTION | MATL | SPEC. | |
|-------------|---------|---|---------------------------|----------|---------------|--|
| OTY | | PARIS LIS! | | | | |
| NEXT ASSY (| S) MAIO | OVAR8.4 NOZEKK | APICAL 2606 TEMPLE HER | SHIS DR. | | |
| 540,4000 | 06-23 | œ % | OCEANSIDE, CA. | | (760)774-330X | |
| | | PACÍ IES | _ | STRUT | | |
| | D)A | ESS OTHERWISE SPECIFIE ENSIONS ARE ALTICHE HEANCES ARE: ADELECIMALS & DE | R GRAZE CODE UNO. NO | 646.3500 |) N/C | |

02197, 02440



Linda Lacelle

From:

Pablo Bravo

Sent:

September-13-13 12:11 PM

To:

Jean-Luc Menard

Cc:

Linda Lacelle

Subject:

Re: STRUTS 646.3500

JL,

Go ahead and manufacture the parts you need to replenish stock. I'll try to get a date for the drawing release ASAP.

Pablo

On Sep 13, 2013, at 8:31 AM, "Jean-Luc Menard" < imenard@dartaero.com > wrote:

Hi Pablo,

As discussed yesterday, dwg's are under review.

Just need your blessing so we can manufacture to meet current orders.

THX

JL

Jean-Luc Ménard

Production Engineering Supervisor

DART AEROSPACE

T 1613632-5200 > 227

F 1 613 632-5246

1 800 556- 4166

www.dartaerospace.com

<image001.png>

| Work Order: | 106/14 |
|--------------|-------------|
| | |
| Part Number: | 646-3572 |
| | |
| | Page 1 of 1 |
| | |

FIRST ARTICLE INSPECTION CHECKLIST

| - INCOMMONDER INCOME OF CONTROL O | | | | | | |
|--|-----------|---------------------|--------|--------|-------------------------|----------|
| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
| 2.00 | 1/- 0.0/0 | 2.004 | 2 | | Jkm01 | . • |
| 2.00 | 4-0.010 | 2 004 | | | | ** |
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| Measured by: | R | Audited by: | 27 | Preliminary Approval: | |
| Date: | 13-10-18 | Date: | 13 10 16 | Date: | |
| | | | 73 / 70 / | | |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|----------------------------|------------|----------|
| E | 10.04.14 | Added preliminary approval | KJ | |